Job Aid 6

Key Exchange Server Performance Indicators

There are many different objects and counters available that provide you with important data for characterizing the function and load of your Exchange server. Table 1 shows key performance indicators that can provide a summary view of server health, that you should use in your baseline performance information gathering. Each server's role (mailbox, bridgehead, public folder – see Architecture Chapter 6, "Implementing Administration and Maintenance Procedures") adds additional items specific to that role for you to keep an eye on. The intent of this job aid is to provide a list of those most commonly used in evaluating Exchange Server performance.

Exchange 5.5 Server Performance Monitoring – Key Indicators

Object	Counter	Description	Recommendation	Recorded Value
Database	Cache Hit %	% of Database file page requests that were fulfilled by the IS buffer pool without incurring disk I/O	< 85% Add more memory	
	Cache Size	The amount of system memory in bytes that the IS buffer pool is utilizing.	Based on available memory. Use DBA for optimal use of memory	
	Table Open Cache %	% of Database schema information opened from Open Table Cache.	< 75% Add more memory	
MSExchangeIS	RPC Operations/sec	The rate at which Exchange Server RPC operations are occurring.	Establish performance baseline for your deployment.	
	Connection Count	The number of client processes connected to the information store.	Establish performance baseline for your deployment.	
MSExchangeIS Private	Send Queue Size	The number of messages in the information store's send queue.	Queue should grow and recover to near-zero state, but should not build over time. Should not exceed .5-1% of connected users.	
	Receive Queue Size	The number of messages in the information store's receive queue.	Queue should grow and recover to near-zero state, but should not build over time.	
	Messages Submitted	Total number of messages submitted by clients since service (IS) startup.	Establish performance baseline for your deployment.	
MSExchangeMTA	Work Queue Length	The number of outstanding messages in the MTA work queue waiting to be processed.	Queue should grow and recover to near-zero state, but should not build over time. Should not exceed .5-1% of connected users.	
MSExchangeIMS	Queued Inbound	The number of queued messages received from the Internet	Queue should grow and recover to near-zero state, but should not build over time.	
	Queued	The number of queued	Queue should grow	

	Outbound	messages queued for delivery to the Internet	and recover to near-zero state, but should not build over time.	
	Queued MTS-IN	The number of messages awaiting final delivery to Exchange Server (Information Store)	Queue should grow and recover to near-zero state, but should not build over time.	
	Queued MTS-OUT	The number of messages waiting to be converted to the Internet Mail format	Queue should grow and recover to near-zero state, but should not build over time.	
MSExchangeMTA Connections	Queue Length	The number of outstanding messages queued for transfer to a remote entity (MTA, etc.)	Queue should grow and recover to near-zero state but should not build over time.	

The SLA metrics you defined and the hardware configurations you designed will determine the threshold recommendations for your Exchange 2000 servers. Once you have these defined, you can test your assumptions and monitor for compliance based on the following table of key performance indicators for an Exchange 2000 mailbox server.

Exchange 2000 Server Performance Monitoring - Key Indicators

Object	Counter	Instance	Recommendation	Recorded Value
Processor	% Processor Time	0 - n	Based on your architectural design	
	% Processor Time	inetinfo	Based on your architectural design	
	% Processor Time	EMSMTA	Based on your architectural design	
	% Processor Time	STORE	Based on your architectural design	
	% Processor Time	MAD	Based on your architectural design	
MSExchangeIS Mailbox	Messages Delivered/min	_Total	Based on your architectural design	
	Messages Sent/min	_Total	Based on your architectural design	
MSExchangeMTA	Messages/Sec		Based on your architectural design	
	Work Queue Length		Based on your architectural design	
MSExchangeMTA Connections	Queue Length	SMTP <ServerName>	Based on your architectural design	
SMTP Server	Local Queue Length	_Total	Based on your architectural design	
	Local Retry Queue Length	_Total	Based on your architectural design	

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